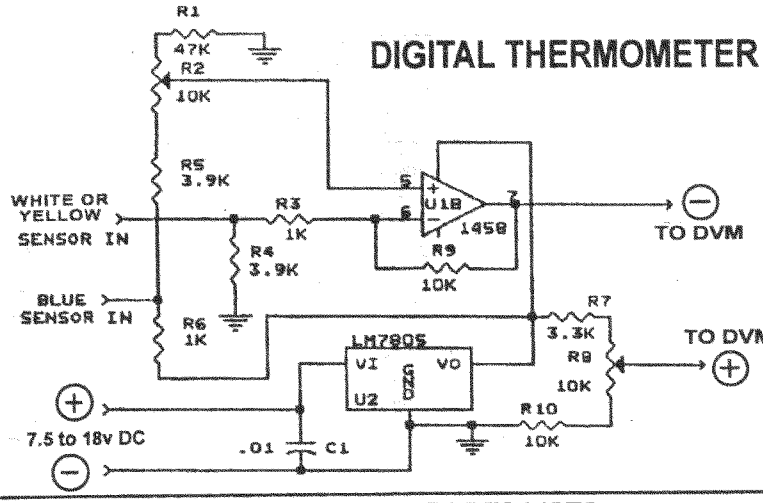
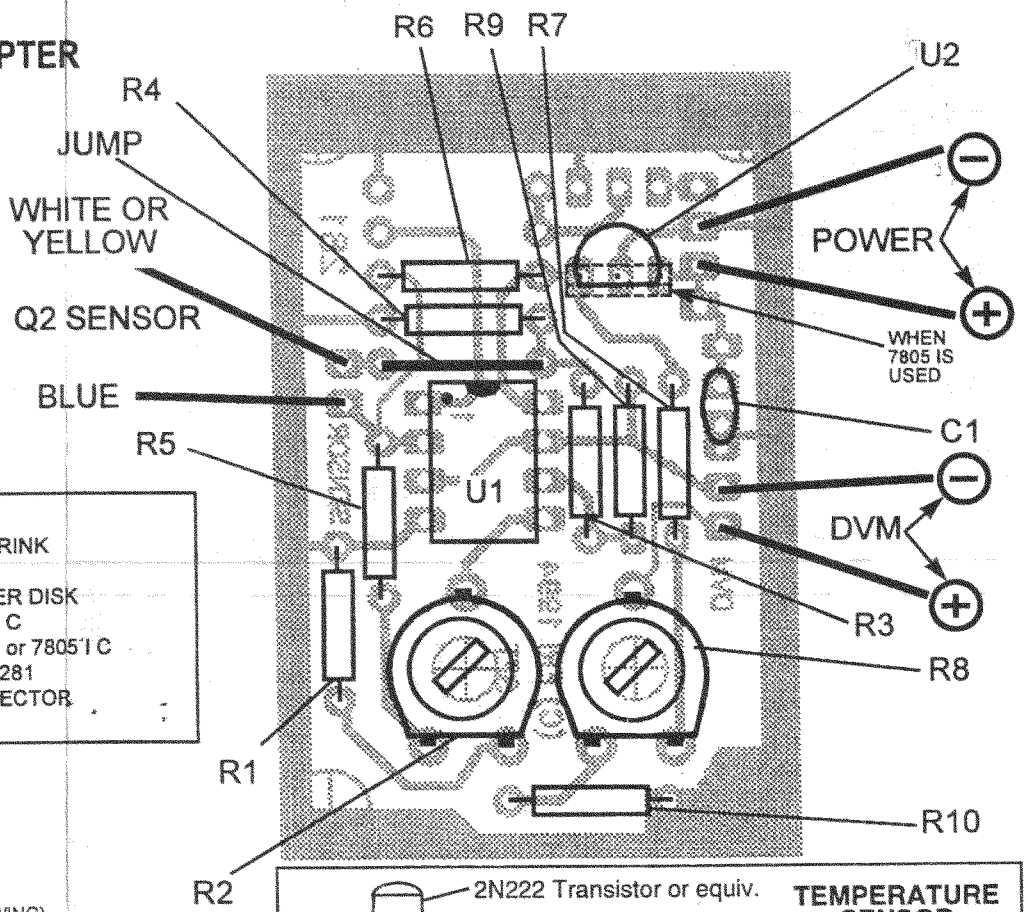
# DIGITAL THERMOMETER ADAPTER




## PARTS LISTS

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|---|---|---|---|---|---|
| ( ) | R1 | 47K OHM RES (YEL VIO ORG) | ( ) | 1/4" | HEATSHRINK |
| ( ) | R2,R8 | 10 K OHM TRIM POT (HORIZONTAL) | ( ) | 2 18" WIRES | |
| ( ) | R3,R6 | 1 K OHM RES (BRN BLK RED) | ( ) | C1 | .01 uF CER DISK |
| ( ) | R4,R5 | 3.9 K OHM RES (ORG WHT RED) | ( ) | U1 | LM1458 I C |
| ( ) | R7 | 3.3 K OHM RES (ORG ORG RED) | ( ) | U2 | LM78L05 or 7805 I C |
| ( ) | R9,R10 | 10 K OHM RES (BRN BLK ORG) | ( ) | P C BOARD 080-00281 | |
| ( ) | Q2 | TEMP. SENSOR 2N2222 or 2N3904 | ( ) | 9v BATTERY CONNECTOR | |
| ( ) | 1/8" | HEATSHRINK | | | |

## ASSEMBLY AND TEST INSTRUCTIONS

( ) 1. INSERT AND SOLDER JUMP
( ) 2. INSERT AND SOLDER ALL OF THE RESISTORS
( ) 3. INSERT AND SOLDER C1
( ) 4. INSERT AND SOLDER U1 AND U2 WATCH ORIENTATION
( ) 5. INSERT AND SOLDER A POWER CONNECTOR - WATCH POLARITY
( ) 6. CONSTRUCT TEMPERATURE SENSOR USING 2N2222 or 2N3904 TRANSISTOR (SEE DRAWING)
( ) 7. FIND LEGS 'E' 'B' 'C' ON TRANSISTOR AND SOLDER LEGS 'B' AND 'C' TOGETHER.
( ) 8. SOLDER THE BLUE WIRE TO THE END OF THE 'C' WIRE AND SOLDER WHITE OR YELLOW WIRE TO THE END OF THE 'E' WIRE (SEE DRAWING)
( ) 9. SLIP 1/8" HEATSHRINK OVER THE 'B' AND 'C' CONNECTION ISOLATING IT FROM THE 'E' WIRE AND HEATSHRINK.
( ) 10. SLIP 1/4" HEATSHRINK OVER ALL THE SOLDER CONNECTIONS AND 1/8" HEATSHRINK. ALSO SLIP THE HEATSHRINK 1/2 THE WAY UPON THE TRANSISTOR (SEE DRAWING).
NOTE: To water proof temperature sensor, put silicon over wire connections then heatshrink.
( ) 11. INSERT AND SOLDER THE TEMPERATURE SENSOR WIRES TO THE PC BOARD.

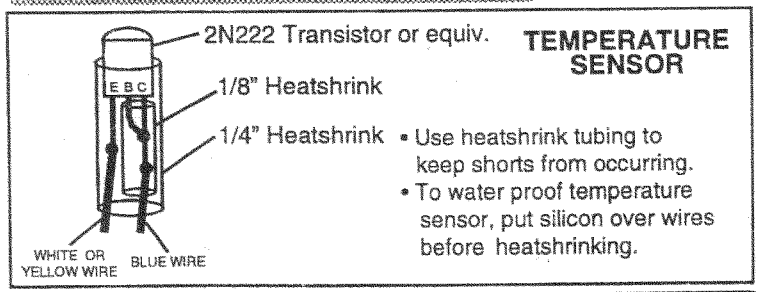
## CALIBRATION PROCEDURE

OPERATING VOLTAGE ( 7.5 vDC TO 18 vDC ).

( ) 1. TOUCH THE ⊕ LEAD OF A DVM TO U1 PIN 7 AND THE ⊖ LEAD TO GROUND.
* ADJUST R2 TO A READING OF 2.5 TO 3 VOLTS.

( ) 2. CONNECT THE DVM AS SHOWN ON THE SCHEMATIC AND THE PCB LAYOUT. SET THE DVM ON 2 VOLT DC SCALE, THIS WILL GIVE YOU READINGS TO THE 0.1 OF A DEGREE. ON MOST DVM'S YOU MUST DISREGUARD THE DESIMAL POINT LOCATION. * PUT THE PROBE FROM THE DT-3 AT THE SAME LOCATION AS THE PROBE FROM A KITCHEN OR OTHER TYPE THERMOMETER. ADJUST R8 SO THE DVM READS THE SAME AS THE THERMOMETER.

( ) 3. IF YOU DESIRE GREATER TRACKING ACCURACY FROM YOUR DT-3 KIT, YOU CAN REPLACE R9 WITH A 7.5 K OHM RESISTOR AND A 5 K OHM POT CONNECTED IN A SERIES. YOU CAN THEN ADJUST THE VALUE OF THE 5 K POT FOR THE BEST LOW TO HIGH TEMPERATURE ACCURACY.




**TEMPERATURE SENSOR**

- Use heatshrink tubing to keep shorts from occurring.
- To water proof temperature sensor, put silicon over wires before heatshrinking.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DT-3 **151183**

# Digital Thermometer Adapter

4/16/98